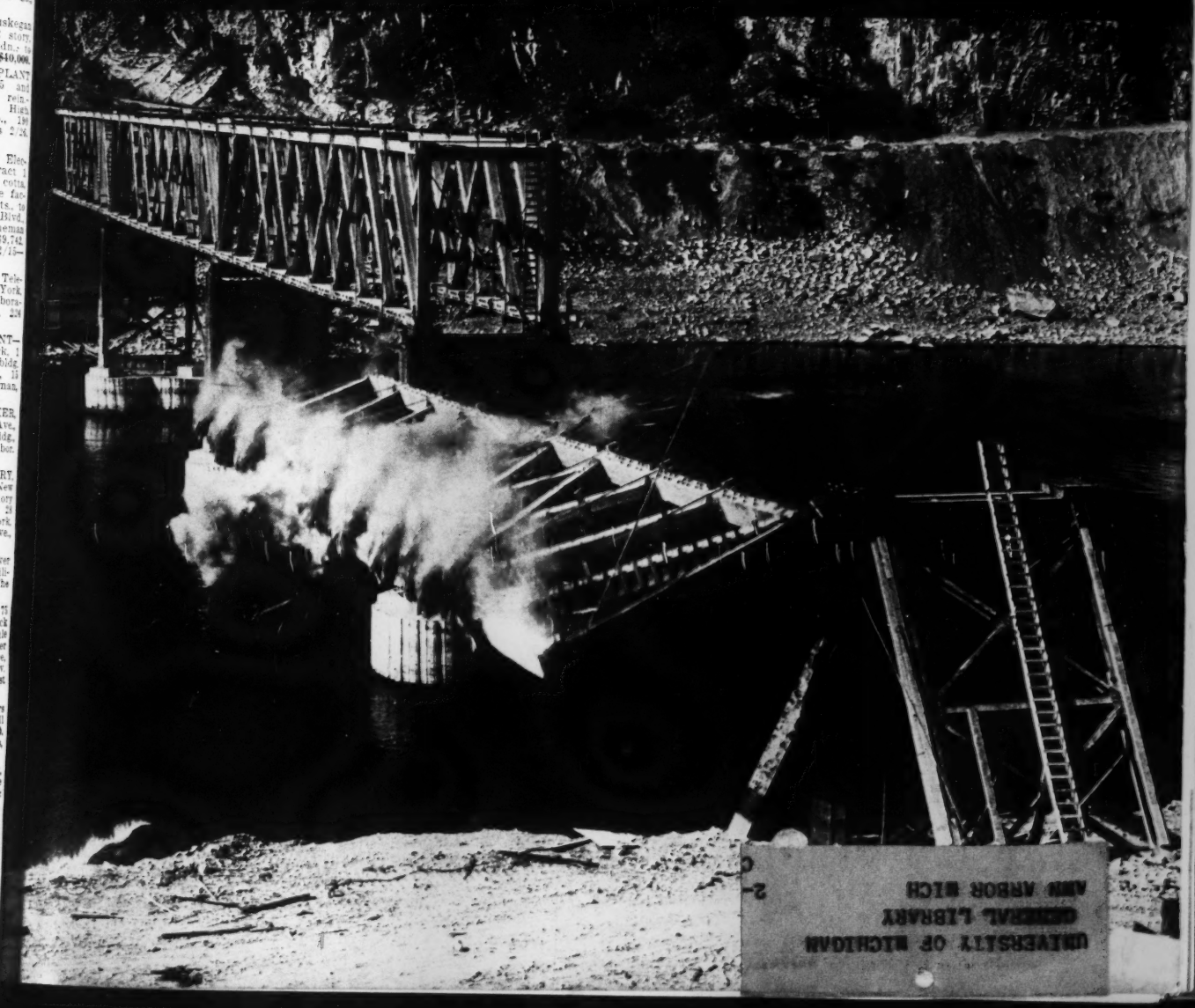
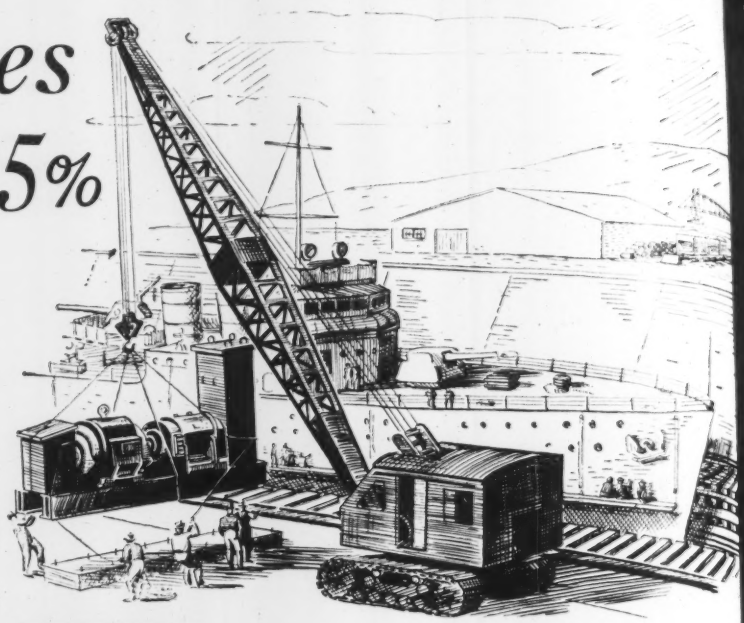
ENGINEERING NEWS-RECORD

Dynamite provides quick demolition of temporary timber bridge at Grand Coulee Dam.



UNIVERSITY OF MICHIGAN
GENERAL LIBRARY
ANN ARBOR MICH

The Motor-generator Set that Saves Copper...85%



By
W. P. HEARSMANN
Industrial Department
General Electric Company

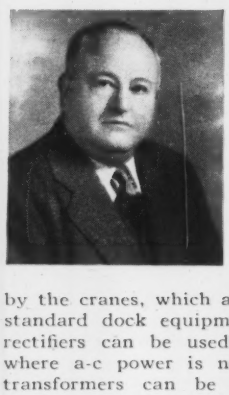
SUPPOSE you have grown up with ships—not sailing them but building and repairing them. And assume you have become the manager of a large shipbuilding and repair concern. With the outbreak of war you find that you have to expand your repair-dock facilities to meet the increased demands upon them.

In order to give adequate service to the ships that will depend upon your port facilities, you know that the dock must be equipped to supply several types of electric power; 110-volt, d-c auxiliary power; 110/220-volt, 3-wire auxiliary power; 110-volt, 3-phase a-c; and 220-volt, 3-phase a-c. Lately, too, ships are being equipped with 440-volt, 3-phase a-c power.

Obtaining copper for the necessary electric cables presents a serious problem. You recall having seen docks with cable ducts (in cross section) as big as 5 to 6 feet high and 3 to 4 feet wide, in order to supply ships with so many different types of electric power.

You talk the problem over with several manufacturers of electric equipment, and one of them suggests a system for your dock which will enable you to service any ship, and which will require considerably less copper than the conventional layout!

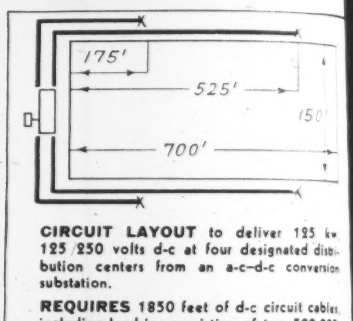
Instead of providing heavy copper ducts to supply both a-c and d-c, he suggests that you lay down a *basic network of relatively light copper to supply 2300-volt a-c over the entire dock area.* He points out that by this means several thousand kilowatts can be supplied at any point of a thousand-foot drydock, with power-outlet receptacles spaced as closely as desired. At these receptacles can be placed *portable unit motor-generator sets*—consisting of motor and generator, control, and motor magnetic switch. They can easily be moved about



by the cranes, which are part of your standard dock equipment. Of course, rectifiers can be used, and in cases where a-c power is needed, portable transformers can be placed at the power receptacles. The shore cables from the ship are then connected to the terminal receptacles which have been provided on the portable equipment.

While this suggestion may sound revolutionary, it has been recently applied successfully by the General Electric Company. The saving on copper can be computed from the accompanying diagrams. *The advantages of the system shown in Fig. 2 are that the voltage is improved, distribution losses in the cables are reduced, and 85 per cent of the copper normally required is saved.*

This is another example of the application of experience and skill by General Electric engineers to solve a problem created by today's conditions. If you have similar problems, we would like to work with you. General Electric Co., Schenectady, N. Y.

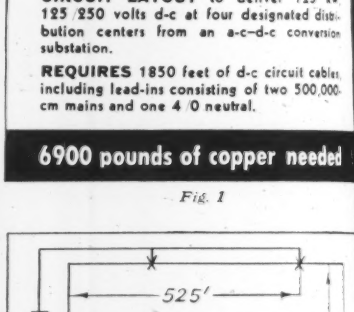


CIRCUIT LAYOUT to deliver 125 kw 125/250 volts d-c at four designated distribution centers from an a-c–d-c conversion substation.

REQUIRES 1850 feet of d-c circuit cables including lead-ins consisting of two 500,000-cm mains and one 4/0 neutral.

6900 pounds of copper needed

Fig. 1



2300-VOLT SYSTEM required to supply a-c power at four designated points to portable 125-kw 125/250-volt unit motor-generator sets.

REQUIRES 1350 feet of 3-conductor a-c cable, including lead-ins.

1045 pounds of copper needed

Fig. 2

GENERAL ELECTRIC

655-30-1200

The Army-Navy 'E', for Excellence in the manufacture of war equipment, now flies over six G-E plants employing 100,000 men and women.

The Week In Engineering and Construction

NGINEERING NEWS-RECORD • APRIL 1, 1943 • VOLUME 130 • NUMBER 13

WPB establishes new section for sanitation priorities

Maverick announces policy change at New Jersey Sewage Works Association meeting. Postwar plan for pollution abatement projects requires immediate action

perators of public sanitation facili- received personal assurance from ry Maverick, director of the Govern- al Division of the War Production rd, that their needs for repair, main- nce and new construction materials ld receive expert and sympathetic tention. Appearing before the annual eting of the New Jersey Sewage rks Association in Trenton on March Mr. Maverick announced that a new tion of his division had been estab- ed to deal exclusively with sewerage sanitation priorities problems, and arrangements soon would be culmin- to have this section administered a man with a national reputation in field of sanitation.

It is understood that negotiations are erway with A. M. Rawn, general man- of the Los Angeles County Sanita- District, to accept the post of section f.)

his new policy, he said, was based recommendations made by Linn H. ow, William Raisch and George oepfer, representing, respectively, American Society of Civil Engineers, erican Society of Mechanical Engi- rs, and the Federation of Sewage rks Associations.

eneral dissatisfaction with the WPB ndling of priorities in the sewage dis- l field has been evidenced in many ters during the past year, and it is ected that the changes outlined by Maverick will eliminate future diffi- ties. All communications to the WPB tive to priorities for sanitation facili- should now be addressed specifically he Governmental Division, Reference l, to assure prompt action.

Postwar pollution abatement

nother highlight of the two-day con- nce of the association, which brought ether 240 sewage plant operators and ineers in the metropolitan area, was challenging statement on postwar pol- lution abatement objectives by Prof. C. J. Velz, head of the department of civil engineering, Manhattan College, and a water consultant to the National Resources Planning Board.

Said Professor Velz, "Competition for the taxpayer's dollar in the postwar era is going to be keen. Those public works programs that are well conceived, with plans ready to go, will have priority, and rightly so. Let us be realistic—if we expect a due proportion of the tax dollar for pollution abatement construction, it behooves us to prepare now so that we shall be in a position to receive it when public works can again proceed."

Relating that highway interests already had in preparation a vast and well-coordinated program of postwar work, Professor Velz asked, "Where does a town, needing a sewage treatment plant, and with nothing but hat in hand and a letter to Santa Claus stand in the face of such planned and well-organized competition for the tax dollar?"

Outstanding problem in pollution abatement, said Professor Velz, was a realistic approach to the treatment of industrial wastes. To consider municipal sewage and industrial waste separately is to double the task and increase the cost of pollution abatement. Both industry and municipalities will profit by combining their problems, and equitably sharing capital and operating costs. Furthermore, should state or federal grants-in-aid become available for construction of abatement works, industries which are thus integrated automatically will participate in such aid.

Many communities might be desirous of preparing postwar plans and specifications, commented Edward J. Cleary,

(*Continued on page 7*)

• • •

Oregon permits operation of 60-ft. trucks

A bill legalizing a practice already in vogue in Oregon, permitting the operation of 60-ft. trucks throughout the state on special emergency permits, has been passed by the legislature and signed by Governor Earl Snell.

The new law limits the use of these large-sized trucks to the duration of hostilities. Big truck operators who fought strenuously for another bill which would have made the big trucks a fixture in the state—even to the extent of bringing army, navy and office of defense transportation officials to Salem to plead for its passage—are said to have accepted the new measure as an assurance that their operations will not be interfered with during the war emergency.

Postwar plan fund to be sought

The Federal Works Agency will shortly propose to Congress the appropriation of a $10,000,000 fund to be granted to state and local governments —on a matching basis—to finance immediate engineering work on public works projects to be undertaken after the war. A 50-50 matching basis probably will be suggested, which would make it possible to design projects totalling $400-500,000,000.

Preference in the administration of such a fund would be given to smaller projects such as sewers, streets and schools, which could be gotten underway quickly. It is believed that many jobs that have been proposed for financing under the Lanham (war public works) Act but were rejected would be suitable for inclusion in such a postwar program.

FWA officials recognize that the progress with the $10,000,000 fund now available for advance highway planning is not very encouraging for such a program as they have in mind. To date, only a little over three and a half millions of the highway money has been taken up. They are relying, however, on an important change in the situation—the present greater availability of engineering talent. Last year, nearly all firms were tied up on war work, but with war construction slacking off, many firms are now anxious for work.

Press Association Photo

A bulldozer takes a ride

The tempo of modern war not only requires rapid movement of men and guns but of construction equipment as well. Massive transport planes offer the medium of transportation. Many machines and various types of equipment have been specially designed so they can be transported anywhere by air cargo planes.

Army aviation engineers at Westover Field, Chicopee, Mass., are here shown loading a light bulldozer into a large C-47 plane, which similates daily activity of aviation engineers on the battlefronts.

Finish 79,800 war housing units in two months

Construction of 79,800 housing units for war workers was completed during the first two months of 1943, National Housing Administrator John B. Blandford, Jr., announced March 27 in Washington.

In the same period, construction started on 109,200 additional war housing units. These include both privately financed construction for war workers and projects of a similar nature financed with government funds.

At the end of February, a total of 313,500 new war housing accommodations were in varying stages of construction, and approximately 280,000 more were scheduled for early starting under the current program to meet housing requirements created by in-migration of war labor through July 1 of this year, Mr. Blandford said.

Studies are now under way to determine the amount of additional new housing that will be required to accommodate the further migration of labor that is expected to be needed for war production after that date.

Amphibian engineers are invasion roadbuilders

Units of the Engineers Amphibian Command at Camp Gordon Johnston in the South are training to move troops and equipment from a friendly to a hostile shore, establish a beachhead, then keep war material moving in until a permanent supply route is available.

"We may use our equipment to travel along rivers which become highways in undeveloped areas," explained Brig.-Gen. David A. D. Ogden, in charge of the Amphibian Command.

The landing craft, armed with machine guns and manned by soldiers drawn from the Mississippi River tugs, private yachts and fishing vessels, spearhead the landing. As each boat is unloaded it hastily moves away to bring another load. If the beach under attack has no road, the landing craft bring in bulldozers that level dunes while engineers unroll wire mesh that resembles extremely heavy chicken wire. With a little sand thrown on the wire, a road solid enough to support eight-wheel trucks can be put down across loose beach sands in five or ten minutes.

Side-haul railway used to launch Navy tug

The Commercial Iron Works Shipyard, Portland, Ore., has launched its [illegible] naval vessel using its new side-haul railway, which is said to be the largest of its kind in the world.

The railway consists largely of steel rails, which slope from ground level downward at a one-to-six grade for 329 ft. into the Willamette River to a depth of 40 ft. below mean low-water level. Twelve cradles mounted upon railway wheels may be moved up and down this track, all at once, or as few as necessary, depending upon the length and weight of ships handled.

On the level, the tracks run 300 ft. back from the river edge. Upon these tracks are "shunts" or many-wheeled carriages, and upon them are carried "transfers", another set of steel-framed carriages on wheels that can be run to the side on tracks laid out for the repair berths. Propulsion of the moving parts stems from a battery of 200-hp electric motors, operating through special winches and pulling machinery.

The railway is capable of handling ships up to 386 ft. long and weighing up to 3,000 short tons. This, according to William Blanchard, president of Gibbs & Cox, Inc., naval architects, and Randall Engineering Co. of Boston, Mass., builders of the railway, would include the largest destroyers and many smaller and types of cargo ships. Repair facilities can be provided for six large vessels at one time.

• • •

Oil flow to East soon to exceed tanker haulage

Government officials say that more oil soon will be moving to the east coast by pipeline, rail and inland waterways than ever moved by tanker. The "Big Inch" pipeline, finished now as far as Norris City, Ill., is being pushed eastward, with completion schedule for July 1. It will carry 300,000 barrels of oil daily to the east. Another pipeline to carry 235,000 barrels daily, is being pushed northward from Beaumont, Tex., to Seymour, Ind.

Small pipelines will deliver an estimated 200,000 barrels daily to the east and inland waterways about 200,000 barrels daily. Railroads are hauling about 800,000 barrels per day.

Notwithstanding all this, officials say increasingly heavy military demands will make greater supplies for civilians improbable. Fuel oil will still be rationed.

ENGINEERING NEWS-RECORD. Published every Thursday. Vol. 130, No. 13. Price 25c per copy. Allow at least ten days for change of address. All communications about subscriptions should be addressed to the Director of Circulation, 330 West 42nd Street, New York, N. Y. Subscriptions, United States, U. S. Possessions and Latin American Republics, $5.00 for one year, $8.00 for two years, $10.00 for three years. Canada $5.50 for one year, $9.00 for two years, $11.00 for three years. Great Britain and British possessions 54 shillings for one year, 108 shillings for three years. All other countries, $9.00 for one year, $18.00 for three years. Entered as second-class matter Oct. 29, 1936, at the Post Office at Albany, N. Y., under the Act of March 3, 1879. Printed in the U. S. A. Cable Address: "McGrawhill New York." Member A.B.P. Member A.B.C.
Copyright 1943 by McGraw-Hill Publishing Company, Inc., James H. McGraw, Founder and Honorary Chairman; James H. McGraw, Jr., President; Howard Ehrlich, Executive Vice-President; Mason Britton, Vice-President; B. R. Putnam, Treasurer; Joseph A. Gerardi, Secretary; J. E. Blackburn, Jr., Circulation Manager.
Publication office 99-129 North Broadway, Albany, N. Y. **Editorial and Executive Offices: 330 West 42nd St., New York.** District Managers and Branch offices: Fred G. Hudson, 520 N. Michigan Ave., Chicago; J. W. Otterson, 68 Post St., San Francisco; Aldwych House, Aldwych, London, W. C. 2, England; Washington; J. M. Spackman, New York; A. R. Cossar, Philadelphia; E. E. Duff, Jr., Cleveland; B. F. Horn, Detroit; Richard Y. Fuller, St. Louis; R. N. Phelan, Los Angeles; J. I. Ballard, Boston; Ralph Maultsby, Atlanta.

Suit brought over charges that tests of steel plate were falsified

Truman Committee testimony indicates that Carnegie-Illinois plate which showed no less than 57,000 lb. ultimate and 20 per-cent elongation was recorded as meeting specifications.

Two lines of legal action were put under way last week against the Carnegie-Illinois Steel Co. as a result of evidence brought out in hearings of the Senate Truman Committee that tests had been falsified on steel plate produced at the Irvin works for the Navy, the Maritime Commission, and for Lend-Lease. The Truman Committee turned over its findings to the Department of Justice with a request for action.

Also a $2,000,000 "informer suit" was brought against the company in the U. S. District Courts at Pittsburgh and Chicago, under a Civil War statute permitting any citizen to bring suit against anyone claimed to have defrauded the government, and to take half the proceeds of the suit.

Records were falsified

Irvin Works officials admitted before the Truman Committee that figures on chemical composition, ultimate strength, and elongation of steel plate had been falsified. The falsification was said to have taken place at a time when the Irvin Works was being converted from a skelp mill operation to the manufacture of plate. Because the Irvin Works did not have the yard capacity to permit the slow air-cooling of rolled plate customary in plate mills, resort was had to more rapid water-cooling in order to avoid slowing down the rate of operation. This abnormal practice resulted, it was testified, in an unusually large rejection of plate.

The falsifying of the tests, it was said, resulted in the approval of about 5 per-cent of the output, which would otherwise have been rejected. This was at a time when output of the plant was running 60,000 tons a month.

The highest official who admitted knowing of and condoning the falsifications was Wm. F. McGarrity, chief metallurgist at Irvin. Most of the testimony as to the practices came from H. McConnell, sheet mill metallurgist inspector. McConnell's assistant, David Copeland, testified that he had first learned the methods of falsifying the tensile tests at Carnegie-Illinois' Homestead Works.

Company investigating personnel

E. L. Perry, president of Carnegie-Illinois, testified that the falsification of tests was entirely unknown to the other officials of the company, that an investigation is underway, and that "changes in personnel" will be made where necessary.

"The only explanation," he said, "which can be given for the failure to carry out prescribed testing procedures is that a few individuals responsible for the making of the tests, having an intimate knowledge of the high character of the steel and honestly believing that the plates in question would fully meet all requirements, grew lax under the pressure of heavy production."

Perry expressed the opinion that none of the plates improperly approved varied from specification enough to effect the safety of products made from the plates. This led to some discussion of the break-up of the Kaiser-built tanker *Schenectady*. According to the report of the American Bureau of Shipping (*ENR*, March 25, p. 405) the failure was due in part to defective Carnegie-Illinois steel; Perry disputed this.

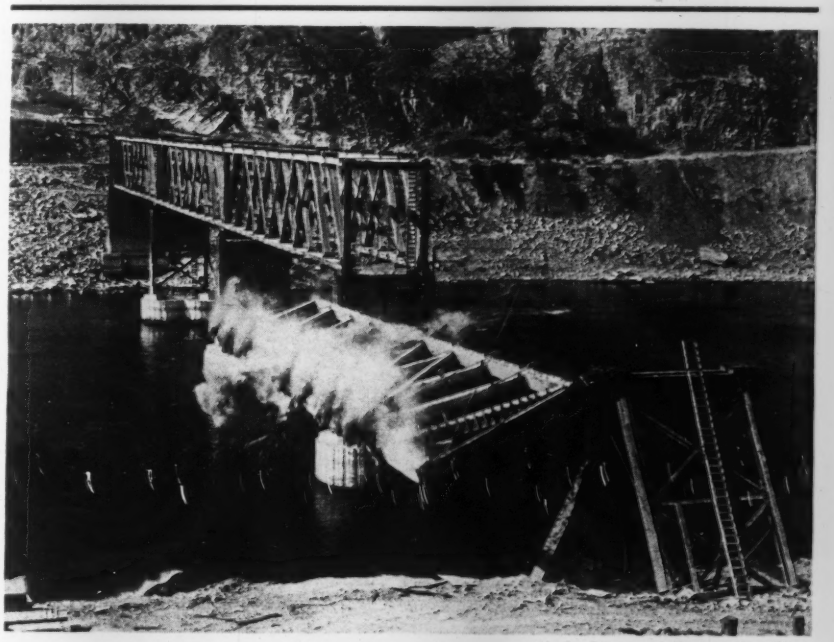
Details of the test falsification, as testified to before the committee, were as follows:

Chemical analysis reports were falsified in two kinds of cases. Sometimes the heat number of the steel became lost so that the analysis was unknown. In such cases, a suitable analysis was made up. Occasionally, the analysis would be slightly above or below the range specified; if, in the opinion of the plant metallurgists, it was nevertheless suitable for its intended use, the analysis would be falsified to bring it within the specification.

For tensile strength tests, a practice was adopted of manipulating the testing machine so that if the breaking strength was at least 57,000 psi. the test would show a strength of 60,000. as required by the Navy specifications. This was done by keeping the counterweight on the testing machine moving a little after the elongation points had been reached.

Elongation tests were faked, according to the testimony, by falsifying entries. The Navy required a minimum elongation of 23 percent. When the elongation was at least 20 percent, it was entered as 23.

The Westchester County, N. Y., Board of Supervisors has agreed to give the Pelham-Port Chester Parkway right-of-way to New York state for development of an arterial highway after the war. The property acquired by the county fifteen years ago was never used and is ten miles long and cost $8,000,000.



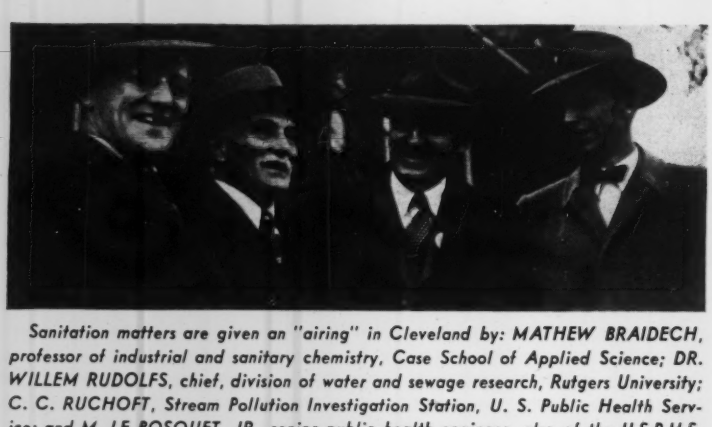
U. S. Bureau of Reclamation Photo

Timber bridge dynamited at Grand Coulee

A landmark of early construction days at Grand Coulee Dam was destroyed recently when the first high-level bridge built across the Columbia River by the contractors was demolished. The demolition method was to tip over each heavy truss separately after loading the top chord with dynamite charges, all of which were connected for simultaneous explosion while the span was in mid-air. Cables previously attached were then used to salvage from the river waters pieces into which the truss had been broken by the explosions.

MEN AT WORK

ALBERT S. LOW, vice president and chief engineer of The Austin Co., (right) and MAJOR WILLIAM A. BONNET, area engineer (left), supervising construction of the world's largest timber factory, exchanged congratulations upon completion of the framework Feb. 22, as MAJOR A. R. HOLLADAY, resident Army Air Force representative looked on.



Sanitation matters are given an "airing" in Cleveland by: MATHEW BRAIDECH, professor of industrial and sanitary chemistry, Case School of Applied Science; DR. WILLEM RUDOLFS, chief, division of water and sewage research, Rutgers University; C. C. RUCHOFT, Stream Pollution Investigation Station, U. S. Public Health Service; and M. LE BOSQUET, JR., senior public health engineer, also of the U.S.P.H.S.

Pictured at the recent opening of the Groton-New London Bridge are, left to right, PAUL C. PARSHLEY, assistant project engineer, Connecticut Department of Highway; EDWARD L. GUERBER resident engineer, Harris Structural Steel Co.; W. G. BRENNEKE, project engineer, Connecticut Department of Highway, and IRVINE P. GOULD, resident engineer for Parsons, Clapp, Brinckeroff & Douglas, consultants to the Groton-New London Bridge Commission.

BILL (W.R.) JOHNSON is materials engineer concrete technician at Fontana Dam of the Tenn Valley Authority. Johnson has been technician several TVA structures and now is on the largest crete job TVA will ever have.

LT. WILL BREWER, executive assistant for the U Engineers on enlargement of the Army's Deshon eral hospital at Butler, Pa., can tell you something winter construction. Look at the snow on his uni Despite the extensive brick work required durin severe winter, the Butler project is to be compl on schedule.

Postwar Construction Plans

The President has submitted plans to Congress for postwar economic and social adjustments. Representatives of the Allied Nations are conferring in Washington with our own statesmen on even broader plans for world-wide rehabilitation after the war. So it seems timely to consider plans which are being considered by federal, state and local municipal governments for engineering and construction projects, which, when actually inaugurated, will contribute much to stabilize conditions when the change-over from war to peace takes place. Following are a few such proposed projects from different sections of the country:

The cost of Kentucky's postwar highway improvements, according to survey plans approved by the federal government, is expected to be somewhere around $20,000,000, it has been announced by State Highway Commissioner, J. Lyter Donaldson. A federal grant of $140,000 has been made available for this year to finance the preliminary planning of the proposed construction. This sum for planning work must be matched by the state.

The Los Angeles City Council has given unanimous approval to a six-year postwar public works construction program prepared by the Bureau of Engineering under the supervision of City Engineer Lloyd Aldrich. The council action carried with it instructions for the preparation of plans, in so far as funds will permit, for projects considered most desirable for construction during the first year of the program, which calls for an expenditure of $100,000,000 to be used in developing new highways and improving existing arteries, in accord with the desires expressed by the National Resources Planning Board.

Grady P. Gentry, chairman of Texas State Highway Commission and president of the American Association of State Highway Officials, has announced a proposed postwar highway program totaling a billion dollars. The Texas highway commissioner headed a delegation from the association to Washington and conferred with Maj. Gen. Philip B. Fleming, Federal Works Administrator, and outlined to him their plans. Mr. Gentry said such a program would depend upon having complete plans ready when the war ends, and to do this the state highway departments must make surveys, secure rights-of-way and draft detailed plans at a total cost of approximately $1,000,000. He said this project would provide work for a year to approximately 1,000,000 men, besides rehabilitating, improving and expanding the highway system.

Dallas, Tex., is making plans for construction jobs that can get under way immediately after the war. Twenty-four street and storm sewer jobs that can be used in a huge postwar construction program have been listed as a backlog by the Dallas public works department, according to Director J. G. Rollins.

The House of the Texas legislature recently acted toward setting up a postwar economic planning commission, to ease the shock of shifting millions of fighters and war-industry workers back to peacetime pursuits. The House adopted a concurrent resolution to create this commission, providing for appointment by the governor of representatives from 31 classifications, covering official, educational, civic, industrial, farm and general economic fields of activity.

Planners and engineers of seven counties of southern California are expected to meet soon to consider proposals for postwar projects, supervisor Gordon L. McDonough has announced. With a population exceeding 4,000,000, the counties of Los Angeles, Ventura, San Bernardino, Orange, Riverside, San Diego, and Imperial, are combining engineering and planning talent with a view to presenting a unified program to Washington when public works are needed to cushion the postwar let-down in industry.

Construction of a new "through-way" from Albany to New England, replacing the present mountain crossing highway of Route 20, has been recommended in a report by the New York State Commission for Postwar Planning. The commission, which outlined a group of postwar projects involving eventual expenditure of more than $500,000,000, also recommended construction by the State Bridge Authority of an additional highway bridge across the Hudson River with a short connection to the west to link the bridge with the Catskill "thruway," a few miles south of Albany.

Mayor Murphy of Newark, N. J., has introduced an ordinance calling for a central planning board of nine members to be created by the City Commission. The board would make comprehensive studies and surveys of federal, state, county and municipal postwar plans and projects to determine their financing, the source and availability of funds to carry them on.

Idaho and Nevada have the jump on other Western states in planning an expansive highway program for postwar days. They are the only two mountain states that to date have entered into 50-50 cooperative agreements with the Bureau of Roads, looking to the preparation of working plans for roads and bridges whose construction is intended, primarily, to give employment to service men after they have been released from the army. The government has a fund of $10,000,000 to defray its share of the cost of postwar highway planning, and all states are at liberty to make cooperative agreements by matching the federal contribution.

Commissioner Thomas H. MacDonald, of the Public Works Administration, Federal Works Agency, has announced that 12 states already have the necessary laws and seven others are now considering legislation that will enable them to build the express highways when peace comes. These future highways are described by Commissioner MacDonald as "limited-access roads designed to serve through traffic rather than abutting properties." Early examples are the Pennsylvania Turnpike and the Merritt Parkway in Connecticut. Traffic is permitted to enter and leave them only at certain selected points. These particular highways are toll roads, but limited access is contemplated, for the future, for non-toll roads as well. Many states cannot now build these advanced motorways, Commissioner MacDonald pointed out, expressing the hope that they will enact enabling legislation so that advance planning can begin.

• • •

Upstate power shortage threatened in New York

The New York Public Service Commission told Governor Dewey and the Legislature that up-state power demands are creating a problem at the present time, especially in the Buffalo war industry zone, where no appreciable surplus capacity over the 1942 regional demand was found. The report, submitted by Milo R. Maltbie, chairman of the commission, said that power supplied to Massena, site of a government aluminum plant, depended largely on increasing transmission facilities from New York City. This could be accomplished best, the report suggested, by reinforcing existing privately owned facilities rather than through construction of a government transmission line. No power shortage is imminent in the metropolitan New York area.

Recorder moves along with the chainmen and hears, through the earphones, readings called out by the distant levelman

Portable Telephone for Surveyors

A "listening aid" commonly used by radio service men in detecting noises in radios has been adapted to the use of survey crews operated by the California Division of Highways. The device consists essentially of two radio tubes, some small A and B batteries and a universal microphone set in a small box together with a pair of insulated wires about 300 ft. long leading to receivers of the "head set" type.

The microphone box is suspended from a light, portable support near the levelman so that he may speak into it. The head set at the other end of the wires is worn by the recorder who moves along with the chainmen and hence may be a considerable distance away from the levelman. The recorder drags the wires along with him as he moves ahead; the levelman takes the "mike" when he moves to a new setup.

The need for some such device became apparent when the noises along the highways were found to drown out the voice of the levelman calling to the recorder even when the latter was only a short distance away. Even by increasing the number of instrument "set-ups" between the bench marks (normally set a [illegible] sand feet apart) there was difficul[illegible] communication. Ordinary highway [illegible] fic is not the sole cause of interfe[illegible] noise; near a flying school it was [illegible] plane motors, sometimes it is rail[illegible] trains or the din of an army truck [illegible] voy and on windy days voice rang[illegible] greatly shortened.

The "listening aid" suspended where the microphone will pick up the levelman's announcement of rod readings.

With the listening aid, rod read[illegible] spoken by the levelman in a low [illegible] can be heard by the recorder e[illegible] where it would be impossible to hear [illegible] shouts without the use of this aid [illegible] hearing. Altogether the device has s[illegible] many mistakes in recording, has [illegible] siderably increased efficiency and e[illegible] the strain of working beside main h[illegible] way traffic. The equipment does no[illegible] terfere with radio and its use is [illegible] restricted by any present wartime re[illegible] lations.

A recent description of the devic[illegible] "California Highways and Public Wo[illegible] by R. S. Badger, district construc[illegible] engineer, gives credit for developing [illegible] scheme to C. F. Oliphant, resident e[illegible] neer, California Division of Highway[illegible] Fresno, Calif.

WPB establishes new sanitation section

(Continued from first page)

aging editor, *Engineering News-Record*, but what has been done to facilitate municipal appropriation of funds for such work? In New Jersey, for example, budgets for the next year have been made up, and unless they already include a capital expenditure item for sewer work (which is unlikely), there is little likelihood that funds can be made available until next year.

Controlling sludge digestion

Practical hints on the operation of sludge digesters were outlined by Albert Kozma, superintendent of the Rutherford, N. J., treatment plant, who pointed particularly to the importance of checking the carbon dioxide content of sludge gas.

This is a simple test, performed with the aid of an inexpensive, Orsat-type gas analyzer. It has been found that if the carbon dioxide content of a gas is kept under 40 percent (by controlling the amount of daily solids additions) foaming troubles are avoided. Furthermore, when it is noted that carbon dioxide in the gas goes beyond the normal 25 percent, this serves as a warning that foaming trouble may begin in two or three weeks.

The work performed by various units of biofilter type plants as measured by removal of biochemical oxygen demand (B.O.D.), was described by W. A. Darby, sanitary engineer, The Dorr Co., Inc., who used data from a plant designed for a flow of 1.4 mgd. but which actually had an average flow of 1.94 mgd.

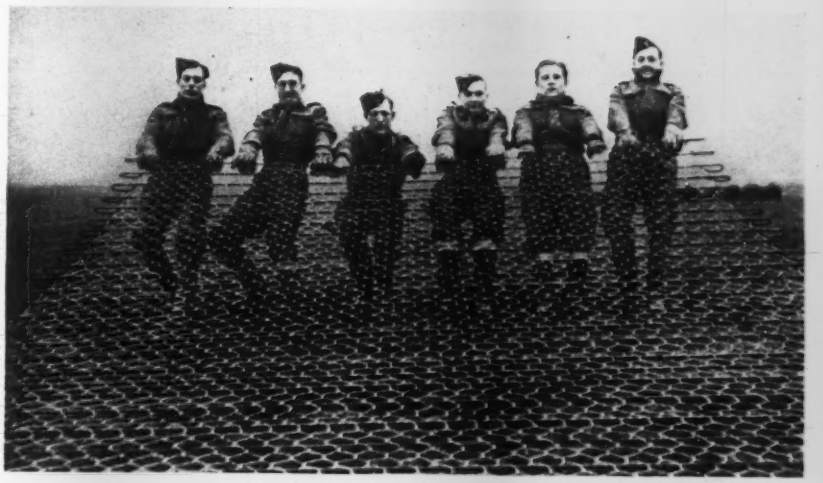
The B.O.D. of the flow reaching the plant totalled 7,941 lb., including that received from the return of digester supernatant, and the plant removed 6,237 lb. The percentage of work done by each unit was: 60.2 in the primary clarifier; 31.7 in the biofilter, and 8.1 in the secondary clarifier. Eliminating the digester supernatant calculations, the B.O.D. percentage removal in each unit was: 45.8 in the primary clarifier, 43.2 in the biofilter, and 11.0 in the secondary clarifier. The latter relationship probably indicates most accurately the way in which the purification work is distributed among the various plant units, said Mr. Darby.

Other papers on the program included: use of lime in sewage treatment, by H. W. Gehm, New Jersey Experimental Station; effect of war activities on the operation of the New Brunswick sewage treatment plant, by Sol Seid, superintendent; making repairs to a methane gas holder, by C. George Anderson, superintendent, Rockville Center, New York, and operation of the New Milford sewage treatment plant by James Entwistle, Jr., superintendent.

Sewage disposal plants

In his address outlining the establishment of a special section in the WPB to handle priorities for public sanitation facilities, Maury Maverick, director of the Governmental Division, gave this summary:

In the United States there are now about 7,000 sewage treatment plants. Of these, 6,711 plants serve a population of 200 or more. Of this number more than 500 plants are located at army posts or other defense areas. Of the 6,191 plants serving a civilian population of 61 million people, 4,718 plants may be termed relatively modern works completed during the last decade.



British develop new type emergency runway

British army engineers are experimenting with a new type of emergency runway paving that shows considerable saving in metal over that required for the portable plates used heretofore. A wide-mesh wire netting is reinforced with cross rods to give the mesh stiffness under airplane tires. This type of surfacing can be rolled up, thus making its application to a field and its removal a much faster operation than laying interlocking metal plates.

Seine River diversion permitted by Canada

Permission to divert the waters of the Seine River and to drain Steep Rock Lake has been granted to Steep Rock Iron Mines, Ltd., by the Canadian government. (Details of this project appeared in *ENR*, Oct. 15, 1942). The presiding judge of the Mining Court of Ontario is authorized to ascertain any damage caused by flooding, draining or diversion as a result of the company's operations and to determine the compensation to any injured parties.

Measures are taken to Improve water service

Typical of municipal projects that local authorities consider necessary in wartime because of special military requirements or because of indispensable civilian needs are these items concerning public works in two Southern cities:

Mobile, Ala.—Federal approval and financing is now being sought for $2,000,000 of additional waterworks improvements. This would increase to $3,300,000, the present program of waterworks improvements in Mobile, which is one of the most crowded war production centers in the country. Major improvements sought include a 20,000,000-gal. reservoir near the site of the filtration plant; development of Big Creek as an additional source of water supply; and installation of an additional 24-in. feeder main for the city's business district. The program is in charge of Ernest M. Megginson, waterworks commissioner. J. B. Converse is the engineer on the work.

Charleston, S. C.—The Commissioners of Public Works, operators of the Charleston municipal water system, are overcoming the lack of new water meters and meeting the great demand caused by the city's growing population by making a survey of customers who over long periods have been using less than the quarterly minimum. Meters are being removed from the homes of these persons and consumers are being billed for the minimum quantity of water without any measurement. The commissioners have had difficulty in getting new meters. They ordered 500 new meters and have been able to obtain only 100.

MEN AND JOBS

Frank W. Mitchell, of Mitchell, S. D., has been appointed secretary of the South Dakota State Highway Commission to succeed Harry C. Westphal who resigned that position recently.

First Lieut. Perry R. Ferguson, formerly at Sioux City, Iowa, has been transferred to Mitchell, S. D., to become base engineer of the army air base there. Lieut. Wilbur F. Coen, whose place he takes, has been transferred to Sioux City.

Albert Vor Keller, Florida contractor formerly of Melbourne, Fla., has been named War Manpower commissioner for the Jacksonville area. Mr. Vor Keller has lived in Florida for 20 years and has had long experience in the problems of both management and labor.

Lieut. Col. Hugh E. Killin, of Monticello, Ark., has assumed the duties of area engineer of Arkansas relocation centers now housing about 20,000 Japanese internees.

Bernard E. Gray has been made general manager of the Asphalt Institute, adding the duties of that office to those already held as chief engineer. Mr. Gray has been with the Institute for the past 13 years, successively as highway engineer, chief highway engineer and chief engineer.

Norman D. Wilson, at present regional director of transit control at Toronto for the province of Ontario, has been appointed deputy transit controller for Canada in the Department of Munitions and Supply. A graduate civil engineer of the University of Ontario, Mr. Wilson has been associated with transportation problems for most of his professional life.

Walter L. Gordon has been appointed managing director of Woods & Gordon, Ltd., industrial engineers and consultants at Toronto, Ont.

R. A. Campbell, who until recently was superintendent of forest operations for the Ontario provincial government, has been appointed production engineer with the Melville Smith Co. Ltd., Fort St. John, B. C.

Maj. W. W. Zass for ten years chief engineer of the Arkansas highway department, it is reported, unofficially, from Managua, Nicaragua, has been promoted to the rank of lieutenant colonel. He is in command of the units making preliminary surveys and doing construction on the 517-mile stretch of the Inter-American Highway in Honduras, Nicaragua and El Salvador. This is a section of the Inter-Continental highway that joins the Pan-American highway below the equator, linking the two American continents.

Maurice Albertson, recent civil engineering graduate of Iowa State College at Ames, has become a junior engineer with the Tennessee Valley Authority at Knoxville, Tenn.

Orville K. Brewer, former assistant county engineer for Page County, Iowa, has been appointed county engineer to succeed Floyd Rubey who is now employed on the Alcan highway project.

J. D. Levin, construction engineer of the Public Building Administration, has been transferred from Bellevue, Neb., to Brownwood, Tex., to supervise construction of a health center under the War Public Works program.

Claud J. Rogers, assistant county engineer of Jefferson county, Ala., has been given new duties. He is to have supervision of highways and bridge maintenance departments and the sanitary department.

Maj. C. G. Saenger, Colorado Springs, Col., has been appointed area engineer for both Camp Carson and Camp Peterson. Capt. A. Schlafli, formerly area engineer at Camp Carson is now with field troops and Capt. John S. Marshall, formerly area engineer at Camp Peterson, has been transferred to a Kansas location.

William Beuttler, of the former firm of Beuttler & Arnold, has joined the partners of the Buell & Winter Engineering Co. to form a new partnership at Sioux City, Iowa, to be known as Buell, Winter & Beuttler, consulting engineers.

James M. Burrows, an engineering graduate of Iowa State College, has been named to the Des Moines water board. Mr. Burrows until a few years ago was a contractor and in 1934 was named state code authority chairman for general contractors.

Albert Raver, assistant Greene county, Iowa, engineer, has been named county engineer to replace C. Arthur Elliott, who has joined the Army Engineer Corps.

R. E. Merrill, assistant engineer of estimates and contracts for the Iowa Highway Commission, has joined the Lytle-Green management contractors on the Alcan highway. C. L. Donovan, also formerly of the commission, who [illegible] been working on the Des M[illegible] ordnance plant, has also joined [illegible] Alcan contractors.

Floyd Campbell, Clay County, Io[illegible] engineer, has been granted a six mo[illegible] leave of absence beginning April 1 [illegible] go with the Ferguson & Diehl Constr[illegible] tion Co., Grand Junction, Iowa, for w[illegible] on the Alcan road in Alaska.

Capt. Marvin O. Kruse, Iowa St[illegible] College civil engineering graduate [illegible] 1933, formerly employed as a design[illegible] engineer for the Stanley Engineering C[illegible] Muscatine, Iowa, has entered the Ar[illegible] Engineers Corps.

William L. Johnson, who has been [illegible] gaged in construction work for the p[illegible] 30 years, was recently sworn in as [illegible] lieutenant-commander in the Uni[illegible] States Naval Reserve. Lieutenant-Co[illegible] mander Johnson is assigned to the C[illegible] struction Battalion of the Navy. H[illegible] graduated as a civil engineer from t[illegible] University of Missouri in 1912 and h[illegible] been associated with various constru[illegible] tion companies ever since. At the ti[illegible] he was commissioned he was gener[illegible] superintendent of Arizona Construct[illegible] For the present, Lieutenant-Comman[illegible] Johnson will be assigned to duty at N[illegible] folk, Va.

Julian D. Monette, office engineer of [illegible] state highway department of Mississi[illegible] has been appointed acting chief engine[illegible] succeeding R. A. Harris. Mr. Mon[illegible] has been with the department sin[illegible] 1921 and has been office engineer sin[illegible] 1927.

H. A. Fisher, head of the department [illegible] mathematics at North Carolina St[illegible] College, Raleigh, N. C., has just be[illegible] appointed armed services coordinator [illegible] the college. He will handle matters co[illegible] nected with the Army training progra[illegible] under which soldiers will be sent to [illegible] school for engineering training.

W. A. Jones, of the Southern Mapp[illegible] & Engineering Co., Greensboro, N. [illegible] has been placed in charge of preli[illegible] inary work at Little Rock, Ark., in co[illegible] nection with laying of a new 20-in. pi[illegible] line from Beaumont, Tex., to Li[illegible] Rock. He will be in charge of t[illegible] location of the line, making layout ma[illegible] and establishing line levels.

A. H. Cunningham, county engineer, [illegible] Buena Vista, Iowa, has been granted [illegible] leave of absence to become superinten[illegible] ent of construction for the W. B. I[illegible] nan Co., for work on the Alcan Highw[illegible] M. W. Bennett, Storm Lake, Iowa, w[illegible] has been Cunningham's assistant, w[illegible] act as county engineer in his absen[illegible]

Rapid progress on road through Central America

Work on the Inter-American Highway progressing so well that overland portation to Central America will ssible next fall, according to a state- made by Edwin W. James, chief, American Regional Office, U. S. lic Roads Administration in the h 3 issue of "Victory."

With the ending of the rainy season, it be possible to expedite work on the incomplete sections of the Inter- ican Highway in Central America, h have been under construction the auspices of the Public Roads inistration since last July. (*ENR*, 30, 1942, p. 143).

The work is being carried on as a war ure. So far as is known, construc- south of the Mexico-Guatemala er is being carried out largely with e labor under the direction of ican contractors. To accelerate the , Congress appropriated $20,000,000, matched with $10,000,000 of Cen- American funds, for expenditure on ighway. In addition, about $17,000,- of U. S. funds have been allocated e work by the War Department for pletion of a pioneer road along the nstructed section of the projected way. When the work started, about miles of road were needed to close in existing highway systems of the ral American countries.

Mexico is extending its highway net- to the Mexico-Guatemala border part of the $30,000,000 in credit ved from the Export-Import Bank 941.

In his report on this work, Mr. James s that roadbuilding in Central Amer- erves more than an immediate stra- defense purpose as Central Ameri- economy has been dependent in large upon the export of bananas, coffee other local products. The market for products was drastically curtailed the scarcity of shipping that de- oped following the outbreak of the Roadbuilding has provided employ- for men thus thrown out of work. Honduras, to provide work for men e idle by the cessation of banana rts, the United States government e funds available for rebuilding a ion of the highway from Poterrillos egucigalpa, the capital of Honduras.

. . .

The track-laying tractor industry re- unfilled orders in January amount- to $242,684,000. The estimated time ired to complete these orders is over ar at the current rate of production. companies comprise the entire k-laying tractor industry, which now loys 23,557 wage earners.

Laying first New Jersey section of the "Big Inch"

On March 18, at Lambertville, N. J., workmen began laying the first New Jersey section of the world's biggest oil pipe line—the "Big Inch," extending 1,250 miles to connect the oil fields of Texas with the great oil tanks at Bayonne, N. J. (ENR—Dec.31,1942,p.915) near the harbor of New York. The picture shows two workers helping a welder join two pieces each of 200-ft. length. These sections of the pipe are placed over the trench, welded together, lowered into position and covered over to form a completed section of the line.

Army lumber purchases to be centered at Memphis

Recognizing the importance of Memphis, Tenn., as a lumber merchandising center, the U. S. Corps of Engineers have established their central purchasing agency there for the entire South and have sent their Washington staff to Memphis. The purchasing agency will be in charge of R. V. English, who has been designated as chief of the Southern Lumber Branch of the Central Procuring Agency, U. S. Engineers. While scheduled contract lettings will continue to be held, much lumber will be bought in the open market. Mr. English and his associates have already purchased more than 2,000,000,000 ft. of lumber, principally softwoods, but including many million feet of hardwoods and oak flooring.

. . .

Poor construction blamed for Bolton Dam collapse

At recent hearings before the claims committee of the Connecticut General Assembly it was charged that faulty construction of the Bolton Dam by the Public Works Department was responsible for the collapse of the structure June 8, 1941, resulting in damage to property. Claim bills against the state made by 36 land owners and the Case Fiber Co., Andover, are now pending. The claims range from $25 to $13,500.

The dam was built several years ago and was first carried away during the hurricane of 1938. Following that disaster the State Public Works Department rebuilt the structure with funds of the State Water Commission. Witnesses at the hearing charged that plans for rebuilding and actual construction work was completely in the hands of the then director of public works, Robert A. Hurley, and the Public Works Department. Construction, it was claimed, was faulty and not in line with the best engineering practice.

. . .

Federal housing contracts awarded competitively

Although empowered by law to award contracts on a fixed-fee basis, the Federal Public Housing Authority has used this form of contract only in unusual cases, maintaining a general policy of placing contracts on the basis of competitive bids, Commissioner Herbert Emmerich has announced. Approximately 92,000 publicly financed housing units for war workers were placed under contract during the first two months of this year.

Many contractors engaged in army and navy construction work now completed or nearing completion are entering the war housing field, thereby expanding the number of experienced organizations available for war housing construction.

Ohio has new type of road maintenance school

To meet demands of the war better, the Ohio State Highway Department is sponsoring a new type of maintenance school. Formerly emphasis was placed on instruction for the engineers and superintendents, but this year, due to the large turnover in the maintenance forces, the laborers actually in charge on the maintenance and repair jobs are requested to attend.

The plan followed is to hold a one-day school in each of the twelve divisions into which Ohio is divided by the Highway department. The school held at Newark, Ohio, recently, and attended by an *ENR* editor, was said to be typical of those held elsewhere. About 125 workers were in attendance, including 25 superintendents on maintenance as well as laborers directly in charge of repairs in the field.

During the morning all workers attended the same classes. Lantern slides and moving pictures were used extensively for illustrative purposes and the subjects discussed included: Roadside and park maintenance, safety, fundamentals of bituminous materials, patching of highway pavements, and bridge maintenance.

During the afternoon those in attendance gathered in five separate groups of about 25 each, the superintendents all gathering in one group and the "laborers-in-charge" in four groups. The classes consisted of five 1-hr. discussions each led by a state headquarters engineer with several years of practical experience.

The principal speakers went from one group to another and thus each had to repeat his talk five times during the afternoon. Subjects covered in the afternoon included: Emergencies, conservation of equipment, roadway structure and surface maintenance, and use of daily and materials reports. All men attending the afternoon sessions were asked to comment freely on the problems discussed.

Hal G. Sours is chief engineer of the Ohio State Highway Department. H. D. Metcalf, director of maintenance, is in direct charge of the meetings.

• • •

Brigadier general rank for eight more engineers

The latest list of Army promotions nominated by the President includes eight engineer officers, all of whom are advanced to the temporary rank of brigadier general. The names of the new generals are Clarence L. Adcock, Charles H. Barth, Jr., John S. Bragdon, James G. Christiansen, Beverly C. Dunn, George Richards, Bernard L. Robinson and Don G. Shingler.

JOBS OF THE WEEK

DWELLINGS, Charleston, S. C.
V Housing Corp., Charleston, awarded contract for the construction of dwellings in Charleston and Charleston County to Long Construction Charleston. Estimated cost $7,000,000. Electrical work to Southern Electric Charleston. Archie B. Myers, Charleston, is architect.

TEMPORARY BUILDINGS, New York
U. S. Engineers, New York, N. Y., awarded contract to Rheinstein Construction Co., New York, N. Y., to construct temporary buildings in Queens County to ing $500,000-$1,000,000; also to John H. Eisele Co., Inc., New York, N. Y., ing $500,000-$1,000,000.

HOUSING, Delaware
Public Housing Authority, Washington, D. C., awarded contract for the construction of housing project to Hadley Contracting & Construction Co., Philadelphia Pa., $1,248,328. G. Morris Whiteside, Wilmington, Del., is engineer.

HOUSING, Lakewood Village, Cal.
Federated Builders, Los Angeles, Calif., will construct 157 dwellings for mitos Circle Co., Los Angeles. To exceed $500,000. Electrical work on awarded to Kuster Wetzel Electric Co., Long Beach. Hiram J. Hamer, Angeles, is architect.

ROADS, Fredericton, N. B.
Province of New Brunswick, Fredericton, reconstructing and maintaining during 1943-44 by day labor. $1,300,000 has been voted. Department Works, Fredericton, is doing the engineering work.

HOUSING, Ohio
Public Housing Authority, Cleveland, O., received lowest bid for war housing B-W Construction Co., Chicago, Ill., frame, $709,000; masonry $739,900.

BUILDINGS, Tennessee
U. S. Engineers, Atlanta, Ga., awarded contract constructing temporary buildings, Gibson County to Goldschmidt & Bethune, Atlanta, Ga. $1,000,000

IMPROVEMENTS, Brazil
Foley Brothers, Inc., and Spencer, White & Prentis, Inc., New York, have been awarded contract for improvements by Pan American Airways tem and U. S. Engineers, Washington, D. C. Estimated to cost $28,000,000

ROADS, Pennsylvania
State Highway Department, Harrisburg, received lowest bid concrete and paving roads in Aliquippa and Monaca Boros, Hopewell and Center Townships Beaver County, from J. Groves & Sons Co., Ridgefield, N. J. $1,172,714. Frame, Harrisburg, is chief engineer.

IMPROVEMENTS, New York
Mount Vernon Contracting Co., Mount Vernon, N. Y., was lowest bidder improvements, Orange County, N. Y. To exceed $2,000,000. U. S. Engineers, New York opened bids.

HOUSING, Connecticut
Public Housing Authority, Boston, Mass., constructing housing Conn. and 6063 to A. Barbaresi & Son, Inc., Plainville, Conn., $1,037,700. J. Gerard Phelan, Bridgeport, Conn., is architect. Frederick Beckwith, and Fleet Thompson, Inc., Bridgeport, are engineers.

HOUSING, Tennessee
O'Driscoll & Grove, Inc., New York, N. Y., awarded contract housing by Engineers, Knoxville, Tenn. $1,000,000-$3,000,000.

HOUSING, Washington
Public Housing Authority, Seattle, Wash., awarded contract housing to Moore Brothers, Los Angeles, Calif., $1,741,300. Whitehouse & Price, Spokane, Wash., are architects.

HOUSING, Massachusetts
Public Housing Authority, Boston, Mass., received lowest bid housing 19025 from Bedford Hill Construction Corp., New Britain, Conn., $535,000. Morris Maloney, Springfield, is architect. Whitman & Howard, Boston, are engineers.

Note—Additional bidding and contract news on many projects large and small appear in the Construction News section beginning on page 13.

British plan big postwar building program

The first indication of steps the British government intends to take to overcome problems of demobilization and transition to peacetime production has been presented to the Parliament in a "White Paper" revealing an ambitious housebuilding program to reconstruct bomb-scarred cities after the war.

The paper, work of a committee headed by Sir Ernest Simon, looks toward a 12-year plan, ready to start when hostilities end. This would require a trained labor force of about 1,250,000 building trade workers. Another 4,000,000 would find employment indirectly in the preparation of materials and the provision of essential subsidiary services.

The government already has started to plan the training and expansion of the necessary labor force to enable the building industry to meet unprecedented postwar demands.

• • •

Some defense building exempt from price control

Two types of construction contracts of the Defense Plant Corporation are exempted from price control, the Office of Price Administration announced March 15. Excluded from Maximum Price Regulation No. 251 and from all other price regulations are Defense Plant Corporation's (1) cost-plus-a-fixed-fee prime contracts and cost-plus-a-fixed-fee subcontracts, and (2) contracts performed on the basis of costs only, with no addition for profit.

These exemptions still leave contractors subject to all other price regulations with respect to their material purchases.

Urge lifting of WPB ban on reclamation projects

Senators from 16 western states have asked Secretary of Agriculture Wickard to join with them in appealing to the War Production Board to lift the construction ban on 42 U. S. Bureau of Reclamation projects. Stop-work orders were issued last Winter. Senator Hayden of Arizona presented to this group the program prepared by the Bureau calling for the resumption of work on all irrigation projects under construction at the time the stop-work order was issued.

The program, prepared by Commissioner John C. Page of the Bureau of Reclamation, indicates the vast increase in food production possible by resuming work on the Bureau's irrigation projects.

The projects on the program are located in Arizona, California, Colorado, Idaho, Montana, New Mexico, Nebraska, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, Wyoming and Nevada.

• • •

Large housing projects started in Philadelphia

Four war housing projects, the largest public construction program ever undertaken in Philadelphia, Pa., at one time, will be started soon by the Philadelphia Housing Authority. At Broad St. and Packer Ave., a 700-family project will be built, extending the 300-family Shipyard Homes, now under construction at 20th St. and Packer Ave. The homes will be occupied by Navy personnel. The three other housing projects are planned for different sections of the city.

Priority rules simplified on small construction

A simple procedure by which builders may obtain controlled materials—steel, copper, and aluminum—under the Controlled Materials Plan for use in certain small structures was estsablished last week. The procedure, covering non-war housing and agricultural and commercial structures costing less than $10,000, provides that allotments will be made by the regional WPB offices. These offices already are authorized to approve start of construction of such projects. They will now also make allotments of controlled materials limited to the amount required to carry out the project. Application is made, in the case of housing, on form PD-105 and PD-105A, and for the other projects on PD-200-c.

Procedure for privately financed war housing built with the aid of a P-55 priority order has been simplified by waiving the former rule that an FHA official must sign all purchase orders to certify they are authorized. Instead, FHA is establishing a compliance inspection service to check up periodically on the use of materials.

• • •

Irrigation outlook is good in Colorado

Heavy mountain snows on principal Colorado watersheds now store sufficient water to insure the state its most favorable irrigation supply in years, according to snow surveys and irrigation reports recently issued by the United States Department of Agriculture.

The surveys, made in cooperation with the Colorado State College Agricultural Experiment Station in Fort Collins, indicate water supplies on the South Platte River and its tributaries, the Arkansas River Valley, the Colorado River and its tributaries, the San Juan and Dolores Rivers and the Rio Grande, are above last year and the best in several years. Recent snows and rains have added to the snow pack and have brightened the irrigation water outlook in every section of the state, the report stated.

• • •

Model homes to be built for workers in Mexico

An investment of $1,350,000 in the construction of colonies of model homes for working class people in Mexico City is being arranged by the Monte de Piedad (National Pawn Shop, oldest institution of the kind on the Americas, dating from 1792). The Public Welfare Ministry, in charge of Dr. Gustavo Baz, is cooperating in the plans, which are scheduled to materialize within a few months.

Corps of Engineers wants specialists

Ordinarily men with engineering experience are qualified for assignment to the Engineer Corps. To make doubly sure, however, that the special knowledge of such men is put to good use, the Corps of Engineers of the United States Army has been authorized to enlist each month 500 specialists who wish to volunteer prior to induction.

Under the plan announced by the Chief of Engineers, trained equipment operators who have been working as civilians on engineering and construction projects may, prior to their induction by Selective Service, volunteer for enlistment in the Engineers. The nearest army engineer office will take their application, act on their qualifications, and provide them with a letter to their induction station which will earmark them for duty with the Engineers. From the induction station they will be sent direct to Engineer training centers at Fort Belvoir, Va.; Fort Leonard Wood, Mo.; Jefferson Barracks, Mo.; or Camp Claiborne, La.

The plan is designed to appeal to trained civilians who, as the army's emergency construction program tapers off, are becoming subject to the draft. Thus earmarked for the Engineers, they can be advanced in grade as rapidly as their special training justifies. They will have the same opportunity to obtain commissions through the Engineer Officer Candidate School as other enlisted men, but their previous training should allow them to speed up the normal process. The plan goes into effect immediately, and engineer officers are making every effort to enlist as many as possible.

Says Major-General Reybold, "We'll give these volunteer specialists as much training as a good man can take. We've got a date with a certain paperhanger, and an engineer keeps his appointments."

OBITUARY

Charles Lincoln Keller, of Keller & Harrington, consulting engineers, Chicago, died in his home at Polo, Ill., on March 5. He was a graduate of Lehigh University, 1893, and had been engaged specially in the design of large bridges. He is said to have been one of the first to devise means of locking together the leaves of double-leaf bascule bridges so that when closed the structures acted as arch bridges.

Alfred Weinedel, 47, of Louisville, Ky., a noted architect, died March 24. Mr. Weinedel designed some of Louisville's most notable structures, including the Calvary Lutheran Church. He was a graduate of the University of Louisville and a member of the Kentucky Association of Architects and also of the American Institute of Architects.

Henry A. Kunze, 73, construction engineer, who for 21 years until 1916 was an assistant state superintendent of public works along the old Erie and State barge canals, died in Rochester, N. Y. March 27. Mr. Kunze is said to have accomplished one of the greatest emergency engineering feats when in April, 1909, he blew up an accumulation of ice which blocked the flow of the Niagara River near Lewiston. The ice jam was more than 60 ft. deep and did much damage to railroads. The dynamite explosion completely removed the ice barrier and drove it out into Lake Ontario.

Charles C. Younger, 39, of Lynchburg, Va., road inspector for the Virginia state highway department, died March 24 at Durham, N. C.

John A. Newlin, 71, an authority on the use of wood as an engineering material, died March 27 at Madison, Wis. Born in Plainfield, Ind. and a graduate of Purdue University, Mr. Newlin was a pioneer in advocating the use of wood in making airplane parts and in the last decade developed the system of prefabricated plywood house construction. He recently retired from the staff of the United States Forest Products Laboratory. He had been with the Forest Service since 1904.

Robert G. Wilson, 65, of Little Rock, Ark., former highway and railroad engineer, died at Hot Springs, Ark., March 25.

Elmer B. Wight, 72, widely known Cleveland civil engineer, died there March 24. Mr. Wight's latest surveys were made for the aircraft assembly near the Cleveland airport.

New York imposes rentals on private hydro-power

New York state recently established new controls over its water power resources when Governor Dewey signed a bill requiring private companies to pay fair rentals for all water diverted from publicly controlled sources. The immediate effect of the new law will be to require the Niagara Falls Power Co. to pay, in the future, for the 15,100 cu.ft. per second it has been diverting from the Niagara River for years without compensation. It is estimated that these rentals will yield the state about $1,500,000 a year.

Montreal needs greater filtration facilities

J. A. Jette, engineer-superintendent of the Montreal municipal-hydro-electrical division has submitted statistics indicating 150,000,000 gal. of water to be filtered there. Of late, however, as much as 165,000,000 gal. have been required daily, and it is felt that a fourth filter bed of a 50,000-gal. daily capacity is needed to provide for additional consumption. There is some worry that Montrealers may be asked to boil the water they use unless permission is obtained to construct the additional facilities.

CONTRACTS AND CAPITAL

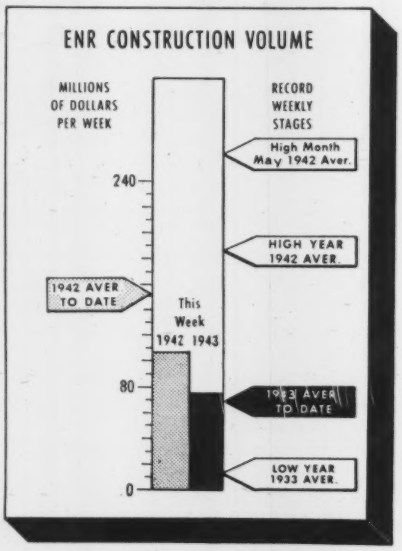
CIVIL ENGINEERING construction in continental U. S. totals $61,389,000 for the week. This volume, not including the construction by military combat engineers, American contracts outside the country, and shipbuilding, is 43 percent below the total for the corresponding 1942 week, and is 17 percent lower than a weak ago.

Private construction tops the week last year by 18 percent, but is 8 percent below last week. Public work is 51 and 20 percent lower, respectively, than a year ago and a week ago as both federal construction and state and municipal work are down.

The week's total brings 1943 construction to $900,430,000, an average of $69,264,000 for each of the thirteen weeks of the year. On the weekly average basis, 1943 volume is 54 percent under the $2,100,224,000 for the fourteen-week period in 1942. Private construction, $96,494,000, is 48 percent lower than last year, and public construction, $936,000, is down 54 percent when adjusted for the difference in the number of weeks.

In the classified construction groups, gains over last week are in waterworks, sewerage, bridges, and commercial and public buildings. Increases over the 1942 week are in bridges and commercial buildings.

New capital for construction purposes for the week totals $1,387,000 and is made up entirely of state and municipal bond sales. The week's financing brings 1943 volume to $64,105,000. This compares with $2,414,379,000 reported for the fourteen-week period a year ago.



Continental U.S. only—construction by military combat engineers, American contracts outside U.S., shipbuilding not included.

CONTRACTS
Continental U. S. Only
(Thousands of dollars)

	Week Ending Apr. 2 1942	Mar. 25 1943	Apr.
Federal	$ 83,034	$54,069	$42
State & Municipal	11,878	4,356	4
Total public	$ 94,912	$58,425	$46
Total private	12,224	15,705	14
TOTAL	$107,136	$74,130	$61
Cumulative			
1943 (13 weeks)			$900
1942 (14 weeks)			$2,10

Note: Minimum size projects included in Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	1942 14 weeks	Cumulative 1943 13 we
NON-FEDERAL	$189,424	$64
Corp. Securities	60,810	1
State & Mun.	105,300	58
R.F.C. loans	23,314	1
FPHA loans	.....	
FEDERAL	$2,224,955	
TOTAL CAPITAL	$2,414,379	$64

ENR INDEX NUMBERS

Index Base = 100		1913
Construction Cost	Mar. '43	285.24
Building Cost	Mar. '43	226.66
Volume	Jan. '43	231

FHA MORTGAGES

	Week Ending Mar. 28 1942	Mar. 20 1943	Mar.
Selected for Appraisal			
Title II	$17,613	$5,714	
Title VI	$36,327	$11,356	

* Not yet available.

IN
NE
APRIL 8